

REMARKS

I. Introduction

Claims 11 to 15 and 17 to 22 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable. Reconsideration is respectfully requested.

II. Rejection of Claims 11 to 15, 17 to 19 and 21 Under 35 U.S.C. § 103(a)

Claims 11 to 15, 17 to 19 and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of U.S. Patent No. 6,338,782 (“Imamura”) and PCT Application Publication No. WO 01/29546 (“Duce”). For at least the following reasons, Applicants respectfully submit that the combination of Imamura and Duce does not render unpatentable the present claims.

Claim 11, as presented, relates to a sensor element for detecting a concentration of a gas component in an exhaust gas of an internal combustion engine, comprising, in relevant part, a heater electrically connected to a first and a second heater supply lead, the second heater supply lead extending from the heater, the first heater supply lead at least largely covering a full surface of the sensor element in a supply region and/or a region of the heater, and is arranged in a plane of stratification between the second heater supply lead and the measuring device. Support for this amendment can be found, for example, at page 6, lines 28 to 29 of the Specification, as well as Figures 1 and 3. The combination of Imamura and Duce does not disclose, or even suggest, *the second heater supply lead extending from the heater, the first heater supply lead is arranged in a plane of stratification between the second heater supply lead and the measuring device, and the first heater supply lead at least largely covering a full surface of the sensor element in a supply region and/or a region of the heater.*

The Final Office Action refers to the low-voltage-side lead portion 552 and the high-voltage-side lead portion 551 of Imamura as disclosing the first and second heater supply leads of claim 11, respectively. However, the high-voltage-side lead portion 551 of Imamura (i.e. the second heater supply lead of claim 11) does not extend from heater 50, whereas in the present claim, it does extend from the heater. Duce does not cure this critical deficiency of the primary reference.

Further, in Imamura, high-voltage-side lead portion 551 is arranged in a plane of stratification between first heater supply lead and the measuring device, not like the present claim where the first heater supply lead *is arranged in a plane of stratification*

between the second heater supply lead and the measuring device. Duce is not relied upon for disclosing or suggesting these features. Indeed, it is respectfully submitted that Duce does not cure these critical deficiencies of the primary reference.

Further, as stated in the Final Office Action, Imamura does not disclose a heater supply lead that at least covers a full surface of the sensor element in at least one of a supply region and a region of the heater. The Final Office Action refers to page 9, lines 10 to 15 of Duce as allegedly disclosing this feature. Duce, however, merely describes electrolyte and protective layers that may comprise entire layers of a gas sensor. There is no indication, in either Duce or Imamura, that heater supply leads could also be treated in the same manner. Nor is there any indication that such treatment would be advantageous. The use of the first heater supply lead as a shield to the measuring device, shielding the measuring device from induced voltages of the second heater supply lead that result from changes in the potential of the second heater supply lead occurring during operation, is a novel aspect of the present application. It would not have been obvious to treat the first heater supply lead as a shield, and as such it would not have been obvious to treat the first heater supply lead in the same manner as the electrolyte and protective layers of Duce.

Further, the Final Office Action asserts that a full layer of a heater supply lead would allow the heater supply lead to be screen printed, which is advantageous in terms of manufacturing time since other layers are produced in this manner. No indication has been provided, however, that such measures are necessary or that the previous methods of using a non-full layer of a heater supply lead increased manufacturing time or were unsatisfactory. As such, it would not have been obvious to one of ordinary skill in the art to combine the teachings of Duce with respect to electrolyte and protective layers to heater supply leads.

Claim 21, as presented, is directed to a sensor element for detecting a concentration of a gas component in an exhaust gas of an internal combustion engine, comprising, in relevant part, a heater electrically connected to a first and a second heater supply lead, the second heater supply lead extending from the heater, the first heater supply lead is arranged in a plane of stratification between the second heater supply lead and the measuring device, and a perpendicular projection of a second heater supply lead onto the plane of stratification of a first heater supply lead lies at least regionally on the first heater supply lead. As mentioned above with respect to claim 11, nowhere does Imamura and Duce disclose, or even suggest, *the second heater supply lead extending from the heater*, and the *first heater supply lead is arranged in a plane of stratification between the second heater supply lead and the measuring device*

Further, the Final Office Action rejects claim 21 as an inherent default of the rejection of claim 11 based on the combination of Imamura and Duce, in that the first heater supply lead at least largely covers a full surface of the sensor element in at least one of a supply region and a region of the heater. However, claim 21 does not recite that the first heater supply lead at least largely covers a full surface of the sensor element in at least one of a supply region and a region of the heater. As such, a perpendicular projection of the second heater supply lead onto the stratification of the first heater supply lead cannot be an inherent default. No independent basis for the rejection of claim 21 is presented by the Office Action, and the combination of Imamura and Duce does not disclose, or even suggest, all of the features of claim 21. Therefore, the combination of Imamura and Duce does not render unpatentable independent claim 21.

Withdrawal of the present rejections are therefore respectfully requested.

Therefore, the combination of Imamura and Duce does not render unpatentable independent claim 11, or dependent claims 12 to 15, 17 to 19 and 21.

III. Rejection of Claim 20 Under 35 U.S.C. § 103(a)

Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Imamura and U.S. Patent No. 4,882,947 (“Murase”). For at least the following reasons, Applicants respectfully submit that the combination of Imamura and Murase does not render unpatentable the present claims.

Claim 20 depends from claim 11 and therefore includes all of the features of claim 11. As more fully set forth above with respect to claim 1, Imamura does not disclose or suggest all of the features of claim 11. Murase does not cure the critical deficiencies of Imamura. Therefore, the combination of Imamura and Murase does not render unpatentable claim 20, which depends from claim 11.

Withdrawal of the present rejection is respectfully requested.

IV. Rejection of Claim 22 Under 35 U.S.C. § 103(a)

Claim 22 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Imamura and U.S. Patent Application Publication No. 2002/0175077. For at least the following reasons, Applicants respectfully submit that the present rejection should be withdrawn.

U.S. Patent Application Publication No. 2002/0175077 was published on November 28, 2002, which is after the October 22, 2002 international filing date of the present application. The present application and U.S. Patent Application Publication No.

2002/0175077 were, at the time the invention of the present application was made, owned by ROBERT BOSCH GMBH. As such, the present rejection is improper under 35 U.S.C. § 103(c). Consequently, withdrawal of this rejection is respectfully requested.

V. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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